Project Summary

This project will develop a System Plan for Regional Express Bus (REB) Service for the Bay Area. In Phase I, a vision and goals for the regional express bus service will be developed. This will include identification and evaluation of existing and proposed routes and services, and evaluation of current and likely future demand. Existing studies for express bus expansion will be reviewed and evaluated. Preliminary options for operating and funding new services will be sketched out and needed physical and operational improvements will be identified. Any potentially "fatal flaws" with the proposals will be flagged. The study team will work with Caltrans 04 staff to organize a series of meetings to discuss the options with stakeholders. In addition, the study team will participate in meetings designed for the broader public by Caltrans 04 and its public involvement consultant. The product of this phase will be an initial set of options (including maps and written descriptions) for further study.

In Phase II of the project, the system plan for REB service will be developed. The technologies, designs, service and operations proposals and infrastructure improvements identified in the Phase I work will be further developed and evaluated. Alternatives for institutional arrangements will be refined. The feasibility of the various options will be assessed in detail, considering service quality and cost, likely ridership, institutional arrangements, needed infrastructure improvements, and financial options. Study team members will work with stakeholders and participate in public outreach efforts organized by Caltrans 04 and its consultant to help refine the alternatives and evaluate their feasibility and desirability.

The alternatives that survive this screening process will be further refined and a financing plan will be developed, including innovative solutions to address financial constraints that are identified. In addition, a plan for the management, operation and maintenance of the proposed REB services will be developed. The proposed system plan will thus consist of proposed service, operations, and infrastructure improvements with a financing plan and a management plan for their implementation. Both short-term (5 years) and long-term (20-25 years) improvements will be identified and prioritized. Prioritization will be based on feasibility and need and, for the short-term plan, availability of infrastructure and financing. The UC team will work with Caltrans 04 and its consultant to assure high quality public involvement in the development of the proposed plan. Based on the evaluation and discussions with stakeholders and the public, revisions to the plan will be made as needed. The product of this phase will be the REB service plan for the region.

In Phase III of the study, the study team will develop a detailed work program for a pilot project for a portion or portions of the REB plan in high priority corridors. The study team will develop step-by-step action plans and timelines for needed actions by each organization involved in the implementation process, as well as phasing for implementation, if appropriate for the selected corridor(s). This study includes the development of the work program for Phase III. The work plan will specify how to carry out the needed infrastructure improvements, bus procurements, bus operations and scheduling, signal and ramp operation plans, financing plans, institutional agreements, etc., needed for implementation.

I. Background and Overview of the Project

Background

Express bus services are an important element in California's strategies for improving mobility. Express buses offer customers a fast ride by offering service between a limited number of points (to reduce stop time) and making use of a variety of priority treatments to speed travel, including reserved lanes and ramps, signal priority, ramp meter bypass, and fast fare payment options. Feeder bus services, timed transfers to other transit services, conveniently located park and ride lots, traveler information systems, and discount pass programs coordinated with the express bus services can greatly increase their utility and attractiveness.

Governor Gray Davis' Traffic Congestion Relief Plan includes a number of projects that support express bus services. The plan includes the addition of high occupancy vehicle lanes on congested freeways, as well as a number of rail transit projects that will depend in part on fast and efficient arterial and freeway bus services to provide access to stations.[1]

In the Bay Area, the Metropolitan Transportation Commission has promoted express buses for several decades. MTC has conducted a number of studies that identify and evaluate possible improvements to the HOV system. A number of these improvements have been incorporated into both the 20-year Regional Transportation Plan (RTP), which is fiscally constrained (i.e., includes only the projects for which funding can reasonably be anticipated), and the Bay Area Blueprint for the 21st Century, a planning effort that parallels the RTP, focuses on near-term congestion relief, and includes additional express bus and HOV projects that should be supported if additional funds can be secured. Among the projects in the Blueprint Plan are bus rapid transit proposals for congested corridors and bridge crossings and proposed expansions in the HOV system to serve those proposals.

MTC's most recent update, the *2002 HOV Lane Master Plan,* includes HOV lane demand forecasts for 2010 and 2025, a survey of public attitudes toward HOV lanes, recommendations for HOV lane system expansion, and recommendations for further development of MTC's Regional Express Bus Program. Included in this plan (which was completed this spring) are an analysis of HOV lane hours of operation, occupancy requirements, and enforcement issues, an assessment of possible HOV freeway-to-freeway connectors and direct HOV access ramps; consideration of spot use of freeway shoulders for express bus operations[2]; and an analysis of express bus stations, stops, and park and ride lots. The update recommends an investment program to "add as many as 387 new miles of carpool lanes around the region by 2025, construct freeway-to-freeway carpool lane connectors, build new ramps to provide direct access to and from carpool lanes, add several major express bus stations to freeway medians, and build more

[1] While recent budget circumstances may not allow all projects to proceed as initially proposed, the projects nevertheless are indications of priorities for the state.

[2] Caltrans currently does not support using shoulders as part-time HOV lanes. Use of shoulders as traveled lanes to close gaps in the HOV lane system could be considered on a case-by-case basis. The HOV Lane Master Plan concluded that volumes do not justify such use; this will be reviewed as part of this study.

than a dozen other express bus/park-and-ride stations around the Bay Area." Costs of these projects would sum to several billion dollars, only some of which are currently identified and programmed.

The MTC Update suggests number of topics that need further study:

- Whether freeway shoulders should be used for peak-period bus use, either to extend the HOV lane system or to close HOV lane gaps
- Use of auxiliary lanes to remove key bottlenecks
- Expanded use of ramp metering with HOV priority treatment
- Park and ride and feeder service needs
- Where additional funds could be found to complete the HOV Lane Master Plan
- Where additional funds could be found for express bus operations
- How to best balance HOV lane policies to obtain efficient use of the lanes while maintaining a significant travel time advantage for buses and carpools
- Whether to increase vehicle occupancy requirements for HOV lane use, possibly allowing HOT (high occupancy - toll) operation for 1 and 2 person vehicles as a revenue generation source
- Feasibility of using toll revenues for express bus services
- Public acceptability of various changes to HOV policies.

The MTC study focuses on freeway HOV lanes and express bus services that would use the HOV lanes.[3] Other organizations, including Bay Area transit operators, county transportation authorities, and Caltrans, have identified or are currently studying additional infrastructure and service improvements that would enhance express bus options for the region. For example, Caltrans is conducting a study of park and ride for the entire state. Transit operators have noted that additional markets for express buses may exist along non-freeway arterial routes in some parts of the region. For example, the San Francisco County Transportation Authority and Muni are considering priority treatment and express operations for several cross-town routes from residential districts to the downtown, Valley Transit Authority has plans for expansions of their successful Bus Rapid Transit routes, and AC Transit has conducted two major studies of BRT on routes that parallel congested freeways, and is just now starting a more detailed look at a corridor between downtown Oakland and the UC campus. Additional services that provide “feeders” to rail systems—ACE, BART, Caltrain, AMTRAK—also are under discussion, as are interregional express bus services. Furthermore, express bus services are being considered by BART and other urban rail transit operators as a high quality alternative to new rail investments or, in some cases, as a first phase in improvements that could eventually lead to rail investments.[4]

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[3] MTC also has developed a Rapid Bus Transit proposal designed to provide high quality bus transit services in a number of corridors. MTC's RBT is a variety of Bus Rapid Transit (BRT). See Appendix 2 (pg. 26) for an excerpt of the MTC RBT proposal; see footnote 4 for definitions of BRT, express bus, and related concepts. TCRP funds have been used to provide some 100 advanced design buses to operators in the region.

[4] A variety of different priority treatments for buses have been developed over the last three decades, and there are also a variety of terms used to describe these services, not always consistently applied. The term express bus in its most general sense means a bus that operates without stops between major activity centers. A "Limited" generally refers to a service with only a few stops at key locations or transfer points along a designated corridor. Freeway Flyer services use freeway HOV lanes and other priority treatments to provide a particular type of express service. Bus rapid transit (BRT) generally means bus service that operates on its own, exclusive right of way with limited

Thus there still are many items deserving further analysis, building upon[5] and extending the work done for the MTC regional HOV lane and rapid bus plans as well as the work for Caltrans and the various other transportation agencies serving the region, and adding new ideas where appropriate. The proposed project, scoped to cover both freeways and other arterials, would assist Caltrans District 4 in further developing plans for express bus services and infrastructure.

stops and priority treatment at intersection, though recently the definition of BRT has been expanded to include freeway flyers and services on local streets with priority treatments and limited stops, but no exclusive ROW. As part of this project we will work with key stakeholders to agree upon a set of definitions on the service types, so we have a shared understanding of what a particular term refers to.

[5] While we expect to be able to build upon other studies, we will critically review their findings and forecasts as part of the assessment in this study. In particular, we will review forecasts against recent data and trends, review the models used for forecasts and validate results, etc.